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UNITED STATES DEPARTMENT OF AGRICULTURE
Rural Electrification Administration
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CURRENT SERIAL RECORDS

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TELEPHONE ENGINEERING INFORMATION

These information letters are intended to provide a means for answering questions that arise in the field and to inform the field of new developments. They are not intended to be instructions nor to replace in any respect the approved channels for establishing requirements and procedures.

T E and C M Sections Distributed Since Letter No. 30, Dated Oct, 1962

Rev. 102	Numerical Index	March 1963
Rev. 157	Customer Toll Dialing	March 1963
Rev. 225	Bell System Traffic Agreement	February 1963
Rev. 325	Application Guide for the Preparation of Detail Dial Central Office Equipment Requirements	December 1962
Rev. 330	Miscellaneous Electrical Loops Attainable With the Use of Long Line Adapters	April 1963
New 340	Use of Line Concentrators	April 1963
Rev. 431	Voice Frequency Loading for Trunk Cables	November 1962
Rev. 615	Design of Open Wire Plant	December 1962
New 622	Design and Construction of Extra Long Span Installation Open Wire Plant	February 1963
Rev. 701	Station Installations	December 1962
New 903	Application Guide for Subscriber Carrier Specifications, REA Form 397c	March 1963

Panhandle LN Trunk Cable Carrier which is compatible with the Western Electric Company. N-1 carrier has been submitted to the Technical Standards Committee "A" for acceptance and inclusion in the "List of Materials Acceptable." Compatibility means it can be used on end of a trunk circuit which has the N-1 carrier on the other end. It has an advantage in being lower in price than the N-1. It was field tested on circuits of the Consolidated Telephone to Florence, Kentucky, (Kentucky 537).

With Buried Cable a technique is needed to prevent frost heaving the pedestals upward. Such heaving has caused damage inside the pedestals by breaking wires and disarranging the cable forms. A field trial installation of a small galvanized iron anchor was made last fall and gives evidence of practicability. It is easily placed at existing pedestals. Another type being evaluated is a metal arrangement employing the "pole key" principle. It has two pieces which bolt together in a manner which clamps them to the pedestal. This arrangement must be attached to the pedestal about 1.5 feet below the ground line where it can resist the force of the frost leave. Digging is required to install it if placed subsequent to the initial pedestal installation.

TOM-1356.6, "Maintenance of Buried Plant" is in the final stage preparatory to printing. It is based largely on the experience of some telephone borrowers over the last five or six years.

Review of TE & CM drafts are now being made by selected borrowers, field engineers, consulting engineers, or contractors who may have an interest in the subject matter. This is in addition to the review by TEOD, the Areas, and TSD staff members.

Pedestal Ground Line Seal is necessary in areas where mice enter pedestals and eat the plastic off the cable and wires. A field trial of such a seal is underway. The seal is made by pouring a fluid compound into the pedestal to solidify at the ground line. The compound is a substance that does not harden to a brittle consistency. It can be removed easily in case a wire or cable is to be added later. The plastic material is such that mice and insects should not attempt to gnaw through it.

Dial Mobile Radio is progressing rapidly. The Bell System's Improved Mobile Telephone Service (IMTS) will undergo a field trial in July of this year. Three additional manufacturers have discussed with REA plans to enter the field of dial radiotelephone. This would double the number of present suppliers now selling this type of equipment.

ETV in South Carolina. South Carolina is expanding its ETV facilities to cover more schools. Extensive additions to the studios in Columbia are under construction. Claude Buster, of the TSD transmission group, recently attended a one-week school on ETV closed circuit facilities held in South Carolina by the Southern Bell Tel. & Tel. Co. This school provided REA with information useful in the preparation of standards and construction practices for the use of its borrowers who contemplate furnishing closed circuit ETV facilities.

Arrester gaps for Cook OGU station protector. The Cook OGU station protector was formerly listed under catalog #473-24 with .005" "Tru Gaps" #41-223. REA coded these gaps "white" because they were used in a station protector although their voltage breakdown values were higher than what we normally considered to be the "white" range. Cook has agreed to supply the OGU under catalog #473-25 with .003" "white" coded gaps #41-225. The .005" "Tru Gaps" are now being coded "blue" to meet our redefined voltage breakdown ranges. The .005" gap should no longer be used in the OGU for either new installations or for replacements. The only remaining application for the .005" "blue" "Tru Gaps" is in lightning arrester assemblies for the protection of paper insulated cable.

Station Wire Attachments. Table IV on page g-24 of REA Form 511, dated March 1962 and Table IV on page 20 of TE & CM 701 indicate a .160" nominal diameter for #22 ga station wire and specify attachments accordingly. Specification PE-20 for Station Wire now specifies a nominal diameter of .140" for #22 ga 3-conductor wire and production samples run about .125". The attaching devices specified in Table IV are therefore not correct. The 3-conductor #22 ga PE-20 station wire should be attached with 1/8" or 3/16" round crown staples; 1/8" one-hole offset clamps; Type B station wiring clamps; or Type B station wiring nails.

Revision of Bulletin 385-2, "Methods of Purchasing Special Electronic Equipment for Use on Systems of REA Borrowers" has been issued. A new Bulletin 385-4, "Special Equipment Contract and Specifications" has also been issued which provides for the use of REA Form 398 in buying electronic equipment on the "furnish only" basis.

Attention is called to the fact that all test jacks, test point, and other transmission measurements as normally required in acceptance testing are to be made by the borrower or consulting engineer in order to comply with Closeout Documents. This applies to both "Seller Installed" and "Furnish Only" type of contracts for equipment purchased under Contract Form 397a, b, and c and Form 398.

Central Office Battery Maintenance. Addendum A to TOM-1276 "Central Office Battery" was issued in March 1963 as a step toward improving the life expectancy of storage batteries. It has been found that many power panel voltmeters are not trustworthy and should be checked periodically against a voltmeter of known accuracy. It is believed that many batteries are not lasting as long as they should due to lack of correct operation.

Loop Limits Using Long Line Adapters. A revision of REA TE & CM-330, "Maximum Electrical Subscriber Loops Attained with Use of Long Line Adapters," issued in April 1963 increases the permissible loop limit from 2000 ohms, which was the former limit to a new maximum of 2500 ohms. including the resistance of the telephone set. The new limit is applicable to the older central offices as well as to the new ones which have greater loop limits than the older ones. Studies are underway to reevaluate the criteria for long line adaptors on switchboards purchased under previous issues of the REA specification.

Microwave in California. REA has approved a contract for microwave for connecting six CDO's with the Pacific Tel. & Tel. Co. in Fresno, California.

Loop-Around Test Equipment. The basic purpose of this equipment is transmission tests on those facilities employing electronic devices, such as carrier, microwave and voice frequency repeaters. The equipment can be used to test EAS trunks and subscriber line carrier as well as toll trunks. It is our position that the borrower should own, and REA finance the milliwatt supply and the loop-around test circuit when (1) carrier equipment or voice frequency repeaters are used on trunk circuits, (2) the connecting company is requesting its installation, and (3) settlement arrangements are satisfactory. REA has been recommending that its borrowers charge the connecting company for two sets of connector terminals at one-half the one-party business rate for each set. We have coordinated our requirements with AT&T transmission engineers, and are in a position to advise exactly what is needed. Item 3.05 of the central office equipment contract, REA Form 558 dated 10-62, is applicable.

Composite Cable. REA cable specifications PE-22 and PE-23, for plastic insulated cable provide for five cable sizes containing both 19 and 22 gauge conductors. The 18 and 25 pair sizes have six 19 gauge pairs and the 50, 75, and 100 pair sizes have twelve 19 gauge pairs. REA is of the opinion that other sizes and combinations of gauges should not be used without approval. Wide use of the approved sizes permits manufacturers to stock them which makes short lengths available in emergencies for repair jobs. Non-approved sizes and gauges cost more and delay delivery. If made special, none may be available when needed for emergency use. However, REA is considering the problem and may approve other combinations if there appears to be sufficient demand.

